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The Use of Photo Elicitation as a Data Collector Method for Agricultural Extension in Rural China

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Creative Component

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Abstract: The research described in this paper was conducted as part of a three-year University Affiliations Program funded through the Educational and Cultural Affairs Office of the US Department of State (formerly the USIA). The research team from Iowa State University used photo elicitation as a vehicle for conducting interviews with rural Chinese villagers to determine their top concerns or "care abouts" for the future of their community. The study aims to evaluate the photo elicitation method as a research tool to assess community opinions and needs. The villagers' perceived "care abouts" were compared against those of the professors and graduate students of Zhejiang University. This research was designed to illustrate the importance of maintaining two-way communication flows between University extension agents and villagers in clarifying needs and in setting priorities.

Chapter 1: Introduction

Introduction

The current "Reform and Open" policy in China, which commenced in 1997, has resulted in considerable economic growth but mainly for the residents of coastal cities. In recent years, however, there has been evidence that the economic benefits of this policy are also reaching the rural interior provinces (Garnaut, et al, 1996; Zhu, 1991). With improved material living conditions in China's countryside, the national government has been taking steps to foster democratic reform through the implementation of village-level elections for local officials (Kellihner, 1997). Furthermore, Chinese President Jiang Jemin indicated in a speech to the 15th Party Congress in 1997 that the next step in the process of democratic reform will be the implementation of free elections at the township and district levels, an administrative stratum one notch above the village level.

It is under this promising Chinese policy reform that Iowa State University began to collaborate with Zhejiang Agricultural University (now Zhejiang University, or ZU) in Hangzhou to develop an institutional partnership focusing on the establishment of a rural and agricultural extension system. The three-year project, funded by the United States Information Agency (USIA), provides opportunities for ZU faculty and staff to come face-to-face with the practical problems encountered by ordinary farmers. Such experiences are expected to facilitate a reorientation from an exclusively government dictated farmer services to a consumer demanded extension services. This re-thinking is expected to produce a breed of professors and extension specialists who will become advocates for the rural population, so that peasant problems and concerns may reach the proper authorities positioned to respond to these needs.

2) Overview of the ISU-ZU Initiative

While economic reforms in China have encouraged industrial growth, particularly in the automobile and electric power generation industry, most of China's labor force is engaged in agriculture, even though only 10% of the land is suitable for cultivation. With almost all of its arable land used for food crops, China is one of the world's largest producers of rice, potatoes, sorghum, millet, barley, peanuts, tea, and pork. Hong Kong is a major importer of Chinese-produced vegetables and fruits, fish and shellfish, grains and grain products, and meat. High yields in crop production can be credited to intensive cultivation, but China hopes to further increase agricultural production through improved plant stocks, fertilizers, and technology (U.S. State Department, 1999).

China's government-based extension service includes 675,000 full-time extension workers employed at the national and subnational levels, along with 500,000 full- and part-time extension farmer technicians at the township and village levels (World Bank, 1999). The Provincial Bureau of Agriculture is a policy-oriented government agency that implements the central government's extension initiative. This top-down approach to extension has been successful in disseminating agricultural technology, but it was not designed to foster the growth of democratic institutions at the local level.

ISU/ZU Partnership Project

As part of its strategic plan, Zhejiang University has attached great importance to providing extension services in rural areas. To accomplish this, it has instituted a plan of work that includes (1) publicizing and distributing information about new technology, (2) assigning university staff to rural areas to assist poor farmers improve their farming methods, (3) providing short-term technical training courses for farmers in local communities and at the university. At the county level ZU has separate research stations in the areas of animal husbandry/veterinary medicine, plant protection, agricultural engineering, soil fertility, and economics/management. ZU also provides continuing education training for extension workers.

Furthermore, ZU is drawing up plans for a new academic major in rural regional development that will be staffed by faculty members from various departments who are interested in applying the fruits of scientific research to rural development efforts.

In 1999 three ISU professors and an ISU extension field specialist spent four weeks in Zhejiang Province to develop a curriculum for agricultural extension education with their ZU counterparts. In the process, they toured rural villages and enterprises, and met with rural village and enterprise leaders to gain an understanding of ZU's current and potential role in providing extension services to rural villages. The meetings and site visits were instructive in formulating a strategy with ZU leaders regarding one of the project's main objectives -- to strengthen ZU's capability to help solve grassroots level development problems through the design and implementation of an extension service within the University's framework.

The ISU team discovered that ZU faces many challenges in the establishment of a grassroots extension service, not the least of which is determining what its philosophy and mission will be. The ISU team offered several possibilities, including (1) ZU becoming a direct service provider to farmers, (2) ZU providing educational services to providers within the current bureau, institute, and committee structure, and (3) ZU recruiting, training, and enabling volunteers at the village level to assist the university in its programming and delivery efforts (Jones, 1999).

The ISU team visit in 1999, while providing a much needed framework of information for continued collaboration with ZU, has raised other questions regarding ZU's understanding of the needs and concerns of their rural clientele. Observations recorded by ISU team member B. Lynn Jones suggest the following:

> My observation on this trip did not bear out perceptible work being done by Zhejiang Univesity in the area of needs clarification. Such work should serve to identify the real or felt needs of farmers. . . I am not sure that I witnessed any real focus that would lead toward regular interaction between the campus and the field . . . It appears that Zhejiang University has a very good name when it comes to the subject of agriculture. However it is not a name that we heard associated with Extension. It is entirely possible that ZU needs to become heavily involved with the planning, delivery and evaluation of the entire series of agricultural "outreach" offered to farmers and rural communities (Jones, 1999).

Likewise, ISU professor and team member Lulu Rodriguez provided similar observations of her field visits:

> ZU's presence in the countryside does not seem to go beyond the informal ties it has developed with its alumni. When farm managers and farmers were asked where they get their information to keep them abreast with trends in agriculture and to help them with their every day tasks, the inevitable response was "the Bureau" without specifically referring to the governmental institution to which this bureau is attached. It is evident, however, that most of them are referring to the agriculture bureaus and to the local academies who conduct verification trials (Rodriguez, 1999).

Purpose of Research

The ISU team members' observations regarding an apparent lack of interaction between ZU professors and rural clients in identifying client needs provide the backdrop for a research study that compares the stated needs of one rural village to the perception of those needs by ZU professors and graduate students. Using McLeod and Chaffee's co-orientation theory as the basis for determining congruence of thought between the villagers and the university professors, two basic questions deserve further study: (1) What do the villagers care about or see as their most pressing needs? (2) What do the university professors and their students think the villagers care about or see as their most pressing needs?

Chapter 2: Review of Literature

Extension in China.

To understand Zhejiang University's role in extension, a more thorough understanding of the history and current structure of extension in China is imperative.

Agricultural extension efforts in China began as early as 1915 through the efforts of a few outstanding individuals and private agencies. Sponsored by the National Committee of the Chinese Y.M.C.A., Dr. David Yui first introduced a popular lecture tour on reforestation. This lecture program was carried out largely in big cities for nearly two years and was enthusiastically accepted by the audiences (Yang, 1945).

The pioneering efforts of Dr. Yui were followed in 1918 by the Dean of the Agricultural College of the University of Nanking, who introduced the extension system to improve cotton production in China. At that time a cotton specialist from the United States Department of Agriculture was invited to direct this work, whereby varieties of cottonseeds were brought over to China and grown in various localities. This early work of individuals and private agencies indicated the possibility of using agricultural extension as an instrument of rural education. Even in those early years, it was evident that agricultural education could serve to bridge the gap between agricultural scientists and farmers (Yang, 1945).

There are few sources of information that speak to the state of agricultural extension during and immediately following the overthrow of the Chinese National Government by the Mao-led Communist Party. One must logically assume that organized extension services were set aside through the transition period as the Communist Party established and promoted its own political platform.

While there are many examples of individual extension efforts in China in the early 1900s, it is not the purpose of this paper to provide a comprehensive historical summary. However, one or two more examples stand out as unique and progressive for that time period in that part of the world. For example, the Ting-Hsien Experiment represents the most unique

feature of rural education and rural reconstruction of its time. Initiated by Dr. Y.C. James, the program was the first endeavor in China at organizing a campaign to eliminate illiteracy. This literacy education program led to additional "Mass Education Movement Programs," including agricultural and economic reconstruction, rural health, and citizenship education (Yang, 1945).

Early efforts aimed to establish extension through government systems were not particularly effective. An extension office of agriculture was created in 1915 by the Ministry of Agriculture. Located outside the city of Peiping in an old temple, the extension office worked on a few small demonstration plots and attempted to distribute a few varieties of foreign seeds to nearby farmers. Though the office was abolished two years later, it stands as the first central office of agricultural extension established by the Chinese government (Yang, 1945).

The Chinese National Government, established in 1927, spared no efforts to promote agricultural production. The 1929 organization of a National Committee of Agricultural Extension Service led to government agency involvement in different phases of agricultural development, including land administration, water conservation, banking, social welfare, food production, and forestry. Extension in China since 1915 and then under the Nationalist Government from 1925 to 1949 was plagued with difficulties. Many of the pioneering individuals and private agencies engaged in early extension work operated on a shoestring budget and eventually found the job too big for their small resource base, resulting in disappointment and disillusionment. Yang (1945) cites the lack of direction and commitment of government agencies engaged in extension efforts:

> Among the public or government agencies, the most glaring weakness was a lack of real or serious purpose that spelled failure even before the project was started. Many of the government programs for agriculture were not formulated with any abiding faith in agriculture nor with any genuine interest in serving the rural people. Sometimes these governmental measures were proposed only for political advantage. Once the ulterior purpose was served, the proposals were dropped. If a proposal survived the preliminary paper-work state and evolved into a thorough-going organization, its "busy" Commissioner devoted much of his time to arranging and displaying some brilliantly painted signs over the gate entrance. He also would provide himself with an abundant supply of letterhead and some printed mimeographed materials that contained elaborate organizational charts and graphic presentation of the rulings governing the functions of different offices. All the preliminaries and paraphernalia were planned with earnestness and usually worked out to the minutest details.

> Having done these, the Commissioner considered his assignment finished, attempting no more active program than was expediently necessary and leaving the organization to drift with political winds (p. 53-54).

Yang also cites other common mistakes in delivering extension services in China by the late 1940s, including the use of imported rather than local materials and machinery and the lack of Chinese scientists and experts willing to engage with the villagers in field demonstrations:

> . . . we have seen a few Chinese scientists and experts who have been well trained in theories and principles. They were indeed unusual teachers in the classrooms and maybe very entertaining in the laboratories, but strange as it may seem some of them would hesitate to go out in the field and soil their hands. A college professor of forestry was reluctant to go out on a rainy Arbor Day to teach the nearby villagers the proper way of planting trees. His reluctance would be better understood if he were a college physician, instead of a strong protagonist of reforestation. To the . . . peasants who had walked three to five miles to observe the much advertised demonstration, the effect of the weather on the expert was a gross disappointment (p. 56-57).

There are few sources of information that speak directly to the state of agricultural extension during and immediately following the overthrow of the Chinese National Government by the Mao-led Communist Party. Although the founding of the People's Republic in 1949 led to the initiation of many attempts at agricultural reform, mismanagement and disastrous political movements hampered such efforts (Yuan, 1998). The training of agricultural extension specialists through the university system was stopped during the 1966-76 Cultural Revolution that included the campaign against the "four old traditions" where higher education systems, including agriculture, was shut down completely and intellectuals were sent to the countryside for "political education" (Tso, et al., 1998). It was not until the late 1970s that the political situation became sufficiently stable for agricultural modernization to proceed. Coordinated under the Ministry of Agriculture, there were four main areas of extension: plant protection, soils and fertizilizers, seed, and agricultural technology applications (Yuan, 1998).

Currently China has a comprehensive, six-level extension network--national, provincial, prefectural, county, township and village. In the mid-1990s, Chinese government statistics indicated 675,000 full-time extension workers employed at the national and subnational levels (World Bank, 1999). During that same time, an additional 500,000 full- and part-time extension workers (farmer technicians) served an important extension role at the township and

village levels. In spite of these impressive numbers, extension work is suffering in China as indicated in a recent World Bank Report (1999):

> Despite these impressive numbers, work by the Center for Chinese Agricultural Policy (CCAP) in four provinces (Zhejiang, Henan, Sichuan, and Heilongjiang) found that the extent of the extension network had declined and continues to deteriorate in some locales. More than 70 percent of village extension personnel report that the frequency, scope, and coverage of their service has fallen in the 1990s. About 50 percent of township extension stations report similar trends. Large numbers of staff have left the extension service and numerous village extension offices have closed over the past decade (p. 84).

Declining interest in extension work can be attributed, in part, to salary policies. Compensation levels are set by state and provincial governments, but most wage mandates are not funded, leaving local authorities with the responsibility of meeting salary costs from their local budgets. Lack of funds for salaries and programs greatly hampers extension activities and effectiveness. To subsidize their income, many extension agents engage in other part-time work or entrepreneurial endeavors, leaving less time for extension activities and interaction with the rural clientele.

> CCAP's study discovered that active extension workers spent 76 percent of their time on extension work in 1996, about 10 percentage points less than in 1985. (Nonextension township officials report that few extension workers spent even one-half of their time on extension activities.) Regression analyses show that the most significant factors affecting extension workers' effort (i.e., time allocated to extension work and frequency of visiting farmers) are wages and extension expenditures (World Bank, 1999, p. 84).

Zhejiang University professors indicate that China's extension organization consists of three main suppliers: the Chinese Academy of Agricultural Science, the Ministry of Agriculture, and the universities. Of the three, the Ministry of Agriculture is the largest at the national level with a Bureau of Agriculture at the provincial level and an Agricultural Office at the county level. Extension policy is handed down from the national level for implementation at the provincial and county levels. As part of their reform measures, the government wants to decrease its involvement in and fiscal responsibility for extension activities and by allowing the universities, its Division of Science and Technology and its Township Enterprise College to deliver extension services. Given this call for increased program and fiscal responsibility at the university level, it is no wonder that Zhejiang University seems to have a disproportionate

interest in the U.S. fee structure for extension services rather than the U.S. mission and goals for extension.

Township and Village Enterprises (TVE)

Over the past 20 years, rural industry has contributed greatly to China's rapid economic growth. According to World Bank (1999) figures, its national gross industrial output rose from 10 percent in 1979 to nearly 40 percent in 1996, and created more than five million new jobs. However, there is concern that employment in township-run enterprises, the backbone of the intital rural industrial movement in China, has fallen since 1994 and that employment in village-run firms is stagnating.

It was evident during the ISU team visit to Zhejiang University that township and village enterprises are of interest at the university level. Indeed, ZU has its own township enterprise, whereby it rents out space for many local producers and entrepreneurs to sell their goods. Likewise, during its orientation to Chinese agricultural extension, ISU team members were escorted by ZU professors to a number of townships and villages engaged in various export producing enterprises.

Despite repeated inquiries from ISU team members regarding the managerial structure of the TVEs visited, it was never quite clear to the team which of the five following types of TVEs (as categorized by World Bank, 1999, p. 89) were being visited:

> *Conventional Public.* Managers are salaried employees; government is sole residual claimaint through taxes and profits; officials are deeply involved in major business decisions; and profits, loss, and risk are borne entirely by government.
>
> *Liberalized Public:* Managers have incentive contracts based on firm profitability; government receives income flows both in taxes and profits, managers risk only reduced income for poor performance, and government bears all financial risks.
>
> *Contract Partnership.* Government shares residual with managers while firm also pays taxes to government; government and managers are joint residual claimants, risk is shared by both parties, and government is not firmly committed to bailing out a loss-making company.

Leasehold. Managers pay fixed rents to government in addition to taxes; managers are residual claimant, risk is borne by managers, and government is not committed to bailing out the company.

Private. Managers may seek alliances with government officials for favors or protection, especially for licensing; but ownership and control lies completely with the manager or owner, as does all the risk; and goverment is not financially committed to loss-making companies, although profitable companies pay taxes.

The profitability and sustainability of TVEs is in jeopardy, partly because of weak credit relationships with bank centers on operating criteria, financial positions, and firm profitability. TVEs do not have qualified accountants, auditors, and other financial staff to deal with modern accounting methods and respond to banking criteria and concerns. The World Bank predicts that in the absence of training programs, this problem will remain and will lead to continued misinformed financial decisions. Zhejiang University professors, many of whom are economists, have not specifically mentioned these concerns to ISU team members. This begs the question of whether Zhejiang University professors do, indeed, have an accurate perception of villagers' concerns and needs. The case study outlined in this proposal that compares the stated needs of one village engaged in a rural enterprise to the perception of those needs by ZU professors explores this question.

Contrast with Grassroots Approach to U.S. Extension

Rural extension activities are common in most parts of the world. Indeed, extension is the basic element in programs designed to bring about change in rural areas. Over the years the concepts of how best to deliver extension services have changed, and continue to change. The term extension may be interpreted in many ways as is evident by looking at the number of statements written about it (FAO, 1985, p. 9-10).

- Extension is an informal educational process directed toward the rural population. This process offers advice and information to help them solve their problems. Extension also aims to increase the efficiency of family farms, increase production and generally increase the standard of living of the farm family.

- The objective of extension is to change farmers' outlook toward their difficulties. Extension is concerned not just with physical and economic achievements but also with the development of the rural people themselves.

Extension agents, therefore, discuss matters with the rural people, help them to gain a clearer insight into their problems and also to decide how to overcome these problems.

- Extension is a process of working with rural people in order to improve their livelihoods. This involves helping farmers to improve productivity of their agriculture and also developing their abilities to direct their own future development.

While illustrating the range of interpretations, the statements also contain common points. All three statements stress that extension is an educational process which occurs over a period of time to support and prepare rural people to confront their problems successfully.

Extension practices are widespread throughout the developed and developing world, and most governments have set up structures to implement extension programs. An underlying set of principles (if not always practices) typically guides extension activities (FAO, 1985). First, extension works with rural people. The people themselves should make decisions about the way they will farm or live--an extension agent should not try to make those decisions for them. Second, extension services have two sets of masters. On the one hand they must be accountable to the senior officers and to the government departments that determine rural development policies, and on the other hand, they must serve the rural people. Extension programs are based on people's needs, and it is the role of the extension agent to bring together the priorities of the government with the needs of the people. This may be particularly difficult in non-democratic countries where the needs of the people take a back seat to the priorities of the government. Third, extension is a two-way link between the extension agent and the farmer and/or villager "clients." While agent advice based on sound research is important for clients, the ideas of the client are equally important. FAO subscribes to the link between research, extension and farmers as "fundamental to sound extension practice and should be a basic principle of extension activity" (FAO, 1985, p. 15).

Concept of Client Needs

The concept of identifying and responding to the needs of the client is certainly not new. Indeed, private businesses and services organizations have understood for years that their

survival depends on meeting the needs of the customer. Hundreds of books and articles advise companies how to analyze customer needs. Those at the helm of major companies have provided insight into customer satisfaction, emphasizing the need to "get closer to the customer" (Townley, 1990). His insight about successful partnerships is instructive for businesses and well as for extension agents.

> One role to which every company aspires is that of "preferred supplier." Most prized of all by some reporting is a close "partnership" relationship between seller and buyer. In such an alliance, there is a blurring of traditional boundaries between the two parties . . . Successful partnerships of this kind developed by such companies as Sherwin-Williams, Baxter International and Dow Chemical illustrate what the representative of one firm describes as "symbiotic supplier-customer relationships . . . viewed as virtually integrated partnerships, requiring suppliers to merge their objectives with customer expectations" (Townley, 1990, p. vi).

The Vice President of Nashua Corporation suggests several reasons why barriers exist between managers and clients, based primarily on managers' lack of understanding of customer values (Birch, 1990):

> (1) Failure to ask customer-specific questions--the blind spot.
> (2) Accepting *market* research as a substitute for *customer* information.
> (3) Excessive focus on *what* is being bought instead of *who is* buying it and *why*.
> (4) Failure to track customer-base data and to explore significant variations to patterns of . . . use.
> (5) Not using regular personal contacts with individual customers to validate clues to such variations.

It is not a huge leap to understand how the barriers to good business-client relationships described by the CEO of a private profit-making firm can apply to an extension agent in a developing country. The common factors are the needs, interests and orientation of the client, whether that client is the customer of a private company or the village "client" of an extension agent in a developing country.

Coorientation Studies

McLeod and Chaffee (1973) provide a theoretical backdrop that is useful in approaching and measuring interpersonal communications between dyads. While their research in large part focuses on the benefits and drawbacks of measuring coorientation between two

individuals, their insight regarding the utility of communication to explain group dynamics and behavior is useful to this study.

> The unit of analysis is not the individual, but the small social system. It may range in size from the dyad to the small group, to the organized collectivity or the small community. Further, the principal variables under study are not individual traits, but relationships between the cognitions of two or more people (McLeod, et al., 1973, p. 470).

McLeod and Chaffee (1973) based their *coorientation model* on a simplified approach proposed by Newcomb (1953). Newcomb began with a two-person model whereby person A and person B who are attracted to each other either positively or negatively are simultaneously cooriented to an object of communication (X). Newcomb's A-B-X systems are particularly useful to later researchers because they apply to both subjective intrapersonal system and to actual interpersonal relations among people as dictated by their cognitions and perceptions. McLeod and Chaffee (1973) point out that "one expectation from [Newcomb's] theory is that persons who like each other will, with increased contact, gradually come to agree more on topics of mutual relevance" (p. 475). Wackman (1973) reanalyzed Newcomb's theory to show that increased *accuracy* of perceiving a friend's position, rather than increased agreement or balance, occurs over time in the acquaintance process.

While Newcomb's model focuses primarily on person-to-person (A-to-B) relationships, McLeod and Chaffee elaborate on the object (X). They explain their thinking as follows:

> We have followed the thinking of Carter (1965), who points out that a person does not orient himself to a single object in his environment, but to a discrimination between objects. Given two objects, a number of discriminations might be made--one for each attribute on which the person can compare the objects. Carter then draws a major distinction between the concept of *salience*, which is the person's summary evaluation of one object based on history of experience with it, and *pertinence*, which is single discrimination between two objects on the basis of a single common attribute (p. 479).

McLeod and Chaffee posit that person-to-person relationships have been the concern of researchers interested in perception. On the other hand, the person-to-object concerns are more appealing to communication researchers since the focus is on the *content* of interpersonal discussion. Newcomb's original A-B-X model assumes A and B are on an equal footing, so that A and B coorient as an equal pair having equal status, access to communication channels, etc.

McLeod and Chaffee argue that this is rarely, if ever, the case in real-world situations. A and B should be expected to hold different perceptions since they have differing roles, purposes, prior experiences, and communication potentials. Certainly, one can accurately assume that the perception of a villager in China is not always in congruence with that of an extension agent.

Based on this theory, therefore, one might assume that accuracy, agreement, and understanding between, for example, an extension agent and a villager will occur if both parties ask the right questions and are sensitive to the responses in order to achieve common goals. This becomes more attainable because the theory is based on the axiom that a person's behavior is a function of his perception of the orientations held by others around him and of his orientation to them. It is not based simply upon his private cognitive construction of his world (McLeod, 1973).

Much of the research on coorientation was conducted in the late 1960s and early 1970s, but the research stems from five older schools of thought: consensus approach (Wirth, 1958); the symbolic interactionist view (Cooley, 1902; Burgess, 1926; Thomas, 1927; Mead, 1934); the social concept of personality and psychotherapy (Sullivan, 1953); and the person perception (Tagiuri et al., 1952; Kogan and Tagiuri, 1958).

Wirth's (1958) study of *consensus* focuses on how human behavior is influenced by group life. He posits that consensus is when homogeneous opinion exists across a population of individuals. However, critics of the consensus model point out that it is unclear what level of homogeneity is necessary in order for there to be consensus. Scheff (1967) points out that it is difficult to define consensus as individual agreement since there are situations where individuals behave as if they are in agreement when, in fact, they do not agree. Similarly individuals may behave in a way that makes one believe there is disagreement when, in fact, there is agreement.

Cooley's (1902) *symbolic interactionst* approach involves elements of the social self and a process of imagining how others think about the self. Cooley points out: "We always imagine, and in the imagination, share the judgments of other minds." This was echoed in Thomas'

(1927) self-fulfilling prophecy in which he explains that "if men define situations as real, they are real in their consequences," a view shared by Adler (1930) and Rokeach (1967). Mead (1934) uses as her central thesis the notion that language is the link between social processes and emergent personalities. In this thesis, Mead views the development of the human mind, personality, and social structure as a function of the communication process through the symbols of language.

Interpersonal psychiatry studies by Sullivan (1945) focus on interpersonal relations and its importance in formulating human personality. He proposes that psychiatry should concern itself with the processes by which individuals come to possess a self that is esteemed and cherished. He further posits that this self "has been acquired in the life of the person chiefly by communications with others."

The *interpersonal perspective* model (Tagiuri et al, 1958) specified three variables derived from the cognitions and perceptions of a dyad: mutuality, which is similar feelings between two people, such as reciprocal liking or disliking; congruency, which is similar perceptions between the other person's feeling and one's own feelings; and accuracy, which is the correctness of one's perception of the other's feelings and vice versa.

Different aspects of coorientation come into play at different stages in the communication processes. McLeod and Chaffee, who focus mainly on the results of communication, define those results in terms of dyadic accuracy, understanding, and agreement. They also point out, however, that the intrapersonal orientations each person brings to a situation are very important to understanding the perceptions of a social situation held by an individual. These intrapersonal orientations will influence the dyadic results of the interpersonal communication process.

Of further relevance to this paper are the efforts of Stamm and Pearce (1971) to develop a formal theory to predict communication behavior by combining the elements of congruency with cognitive consistency theory. They posit that an individual's expectation of congruency with another individual will be confirmed or disconfirmed based on the expectations the

individuals hold of others. Under this model, four sequences of events are possible: (1) the individual expects agreement and the expectation is confirmed; (2) the individual expects agreement and the expectation is not confirmed; (3) the individual expects disagreement and the expectation is confirmed; (4) the individual expects disagreement and the expectation is not confirmed.

Whether or not individuals are in high agreement or low agreement will affect the result of the interpersonal communication. In cases where expectations were not confirmed, there is a strong tendency to ask the other person to explain *his* orientation. The tendency to express one's *own* orientation was strongest when expected agreement was confirmed and lowest when expected disagreement was not confirmed. In the design of communication strategies between extension agents and village peasants, this suggests that incongruency can facilitate a discussion about the differing orientations that each group brings to the table.

McLeod and Chaffee (1973) acknowledge that it is often easier to gather data to measure coorientation variables than it is to find real-world situations where these variables are socially operative. "We probably should assume, in fact, that coorientation is a rare state of social affairs, one that does not simply 'happen' to people unless there are factors constraining them to coorient...and factors to facilitate communication between them" (p. 493).

This should not dissuade development planners, however, from engaging in communication strategies that facilitate coorientation between extension agents and village peasants. It is through these processes that extension efforts can genuinely identify and meet the needs of rural populations in developing countries. This study is a step in this direction. It was designed to explore the congruency and accuracy of perceptions between Zhejiang University and those involved in a rural village enterprise in Zhejiang Province, an area within its sphere of responsibility.

Chapter 3: Methodology

The Objectives

The overall purpose of the study is to determine if there is accuracy and congruency among the extension leaders at Zhejiang University, the village leaders, and the villagers in their understanding of the needs and development priorities of a representative Chinese village. Two basic questions were posed: (1) What do the villagers care about or see as their most pressing needs? (2) What do the university professors and graduate students think the villagers care about or see as their most pressing needs?

This exercise was not designed to find out the specific needs of a rural village so that Zhejiang University can develop programs to meet those needs. Rather the exercise intends to serve as a foundation for a dialogue between ISU project personnel and Zheijiang University regarding the importance of establishing continuous communication ties between university extension agents and the villagers in clarifying the latter's needs and priorities. In a system such as China's where extension has meant top-down government mandates to be imposed on farmers by extension agents, the idea of developing an interpersonal communication network among extension agents, villagers, and scientists is almost revolutionary.

Overview of the Study

The study was conducted in a village located in DeQing Prefecture (county) in Zhejiang Province, located approximately 300 km southwest of Shanghai. The village falls under the category of a "town and village enterprise" described in Chapter 2. It is a suitable village for this type of study because its entire population is involved in a common enterprise: snake farming and the manufacture and sale of snake products. The village raises snakes for the purpose of producing and exporting snake products, such as meat, wines, and accessories. For the purpose of this report, this rural area will be referred to as "Snake Village."

The researchers spent three days in Snake Village interviewing two segments of the population. The first segment is composed of leaders of the village enterprise, including the town secretary, who oversees but does not actively participate in the enterprise, and the village head, who serves somewhat like a committee chair and is an active participant in the snake enterprise. The second segment consists of the villagers engaged in the day-to-day business of the enterprise. These two segments were asked in individual interviews the following question: "What are your ten biggest concerns for the future of the village?"

In addition to relying on verbal responses from the villagers, the interviewer used photo-elicitation as a method of clarifying the stated needs and priorities. In this method, the interviewer distributed Polaroid one-step cameras so villagers can take photographs that depict such concerns. The Polaroids allowed the photos to be developed instantly and used for further discussion. The use of photo-elicitation to obtain sociological and anthropological responses will be elaborated in a later section.

Upon obtaining both verbal and photographic information from the village head and workers, the interviewer asked Zhejiang University professors and graduate students engaged in regional rural development studies to identify what they feel are the top ten needs and concerns of the same village. A review of the responses from both the villagers and ZU participants were then compared to determine whether ZU participants share the same understanding of the village's needs and concerns with the villagers themselves. Incongruency between the village workers' and the ZU participants' perceived needs will indicate that further clarification strategies by Zhejiang University may be necessary prior to developing a comprehensive extension program to serve the villagers. More importantly, this exercise is expected to open the door for the Iowa State University team to discuss the importance of extension agent-villager interaction prior to, during, and following the development and delivery of extension services.

Based on discussions with ISU graduate students from Zhejiang Province and a review of Huang's (1998) case study of Lin Village (China), it was apparent that the success of this experiment--indeed the success of gaining access to the village--will depend on following

established protocols. In this exercise, the villagers should cooperate out of their genuine desire to participate and not simply because the "government" has told them they must. However, it became clear quite early to the ISU research team that it would be impossible to successfully complete the experiment by doing it outside the purview of the government. With this in mind, the following steps were carried out to accomplish the study's objectives.

Step 1 The aims and methods of the research project were explained to the director of the ZU International Office, Dr. Fu Yan. Because the international office staff and ZU professors are well connected with Zhejiang Province officials, they were asked to solicit the permission of the mayor of DaQing County to arrange the meetings. It was requested that separate meetings be set up with the secretary of the village Communist Party, the village head, and eight "typical" family units within the village.

Step 2 Upon arriving at Snake Village, interviews were conducted with the secretary of the village Communist Party to explain the purpose and the steps involved in the study. While the secretary is not involved in the day-to-day operations of the village, he is the government official most closely associated with the village enterprise and was therefore deemed instrumental in assuring the cooperation of the village head and the enterprise workers.

The secretary was asked to provide an overview of Snake Village, including the organizational structure under which it operates. This information was useful in gaining a better understanding of the decision-making hierarchy of the village. Follow-up interview questions were asked as needed to obtain information about the various roles of individuals and groups within the village enterprise, including his role, the role of the village head, and the role of the village workers.

Step 3 The interviewer then asked the secretary how he perceived the greatest needs and concerns of the village for the present and the future.

Step 4 After meeting with the village head, the interviewer met with eight villagers to explain the research project, demonstrate how to use a one-step Polaroid camera, and request that each villager take at least 10 photographs representing their biggest concerns or their "care abouts" for the future. Villagers were selected by the Secretary of the Party. While random selection is the preferred method for collecting survey data, it was not likely that we would be allowed free access to the villagers. The researchers, therefore, relied mainly on the village leaders to make the selection.

Step 5 With photos in hand, the villagers were interviewed on a one-to-one basis and were asked to explain what each photograph represents in terms of his/her "care abouts." Obviously, such discussions took place through an interpreter. The interviewer then assigned each picture into specific need categories as identified in the interviews.

Step 6 Upon completing interviews with all eight villagers and categorizing the photographs, the interviewer instructed the villagers to meet as a group to determine and agree upon the priority order of the needs categories observed.

Step 7 Upon obtaining photographs and completing interviews in the village, the interviewer met with a group of graduate students and a group of faculty members at ZU who are the future or current academic and extension leaders in rural development. They

were asked to list ten things they think the Snake Villagers care about or see as their most pressing needs for the future.

It should be noted here that the ISU graduate students from Zhejiang Province who advised the research team regarding this data collection approach were quite skeptical of the villagers' ability to participate in this manner. It was the perception of the graduate students that the villagers would not have the educational background nor the practical experience to understand the purpose or importance of the study. Further, the graduate students expressed the likelihood that the villagers would be more intrigued with the camera itself than with identifying their most pressing concerns through photographs. Upon further consultation with other ISU professors, the process outlined above was pursued.

Photo Elicitation as a Survey Instrument

A small group of social scientists have used cameras as research tools almost since the establishment of anthropology and sociology as legitimate fields of study in the United States (Harper, 1988). Mead and Bateson (1942) used photography to study and interpret Balinese ritual activities, games, child-rearing techniques, same-sex and cross-sex interaction, among other topics. Collier (1987) suggested that photographs can provide a more efficient analysis of social settings (such as dwellings, poverty, workplace) than can be obtained using only written descriptions.

Collier also described how to use photographs or "photo elicitation" in an integrated way to obtain information and encourage dialogue that probably would not be possible through conversations focused on written or verbal interviews. The use of photographs allows the interviewer to move from a concrete idea to one that is more socially abstract. Harper describes the process as follows:

> In the photo-elicitation interview the informant and the interviewer discuss the photographs the researcher has made of the setting, giving the interview a concrete point of reference. The researcher gains a phenomenological sense as the informant explains what the objects in the photograph mean, where they have come from, or developed from, and what elements may be missing . . . The individual being interviewed comes to a level of understanding, as would anyone

> confronted by a photographic study of his or her social world, that probably did not exist prior to the interview (p. 25).

The focus of discussion therefore becomes the photograph, rather than a question posed by the interviewer. The photographs will not make sense to the interviewer in the way that they will to the Chinese villagers. The interviewer's inquiry regarding the photographs will, hopefully, encourage the villagers to become the "teacher" in explaining the images and, in turn, their concerns to those who care to know.

Harper points out that photo-elicitation is not designed to obtain photos that are visually arresting, such as those seen in a documentary. In fact, the desire for visually arresting photographs stems from the "culture of the photographer" rather than the "culture of the photographed." As such, this study departs from Harper's approach in that the villagers, not the researcher, were asked to be the photographers. The idea is to photograph objects through the eyes of the villager, not through the eyes of the researcher. It will require a "culturally neutral" eye--a difficult and exciting challenge for the researcher--with the goal of obtaining information that emerges from the interviews about the photographs.

Chapter 4: Report of Research Activity

Early in the project design, it became apparent that the success of this approach--indeed the success of gaining access to the village--depended on following established government-sanctioned protocols. The methodology required villagers to participate voluntarily in the project and not be coerced to participate. However, it had become clear during prior visits to China that it would be impossible to successfully complete the study were the researchers to strike out independently. Once on the ground in China and in the midst of the study, it was found that the process had to be slightly revised in some areas. What follows is a summary of the steps and their outcomes:

Step 1: Explaining the project to ZU officials and getting their support to gain access to the village.

Zhejiang University was indeed instrumental in setting up meetings with Snake Village officials to conduct the case study. It was learned that this proved to be a rather uneasy task because Chinese officials are reticent to allow sociologically-based studies of its population, particularly by researchers from free-market democracies whose politicians are quick to publicly point out China's human rights violations. However, Zhejiang University was successful in arranging for the ISU team to meet with the Secretary of the Party of the Village. It became apparent about two hours into the meeting that the Secretary did not understand the purpose or the details of the case study, even though the researchers had provided their Zhejiang University colleagues with a four-page step-by-step memorandum outlining the purpose and the activities involved.

Step 2: Conducting an interview with the secretary of the village Community Party to explain the steps and purpose of the experiment and to solicit village-level data.

The research team spent two days in Snake Village interviewing two segments of the population. The first segment included leaders of the village enterprise, including the Party Secretary of the township who oversees but does not actively participate in village enterprises, an official from the Science and Technology Committee (a branch of the Ministry of Agriculture),

and two other men who apparently held some leadership role in the village but were not introduced to the research team by the Party Secretary. The research team asked numerous questions regarding the village's history, economics, politics, and social and organizational structure. The information obtained and summarized in the following paragraphs provided a much better understanding of Snake Village and its remarkable success during the past few years.

It was learned that life in Snake Village was once marked by extreme poverty, much like in other rural villages in China. When the Chinese government opened and encouraged free market trade and the establishment of village enterprises, a former village leader with an economics background decided that the village should focus on value-added snake products. Rather than continuing its 15-year practice of first-level snake processing (raising and selling snakes), the leader determined that refined (or value-added) snake processing would, indeed, be more profitable. Today, 90 percent of Snake Village farmers are engaged in harvesting and processing four to five varieties of nonpoisonous snakes for food, medicine, and cosmetics (Figure 1). The largest markets for live snakes are Hangzhou and Shanghai restaurants; while snake venom and organs are processed into medicine and wine. Prices are determined by market forces within China (mostly in Hangzhou and Shanghai) since the villagers are not yet selling to foreign markets. After engaging in value-added snake production for only four years, Snake Village is now the most successful (profitable) village enterprise in a 23-village area within the county.

Figure 1. Value-added snake products include foods, medicine, and cosmetics. Package design and marketing are done locally.

The Secretary of the Party who provided most of the information regarding Snake Village is responsible for communicating and implementing government policy in the village. For example, the development plans and business requirements emanating from the county or provincial Communist Party is communicated down through the Secretary of the Party for the village, passed on to the Village Head, and finally shared with the villagers. Policy questions from the villagers work their way back up the hierachical chain--the villagers pose their questions to the village head, who asks the Secretary of the Party for the village, who then refers the question to the County/Provincial government officials (located mostly in the Science and Technology Bureau).

The Secretary of the Party was quite skeptical about the study. It was clear that he did not understand the objectives of the case study. Furthermore, it was his view that the villagers would not have the understanding or skills to take photographs to represent their concerns.

not insist on the matter. By this time, it was clear that the carefully laid out instructions had either not been shared with or were simply being ignored by the Chinese leaders. The team then decided it would be prudent to remain flexible and learn as much information as possible with the limited access given.

Step 4: Determining the villagers' perceptions.

At the completion of the meeting with the Secretary, it became obvious that no villagers had yet been contacted to participate in the study. The Secretary and one or two other participants in the meeting hastily left the meeting room to find eight villagers willing to take pictures for one day and participate in interviews the next day for a payment of 40 yuan (about $5.00). In approximately ten minutes, the Secretary returned with eight villagers--seven men and one woman ranging in age from approximately 25 to 50 years--who looked rather bewildered about being summoned to a meeting. Through an interpreter, the research project was explained, and the villagers were given a demonstration of how to load film into and take pictures from the Polaroid camera. A roll of film sufficient for twenty photographs was supplied to each villager. They were instructed to return in two days with ten photographs that represent their "care abouts" for the future of Snake Village. The extra film would allow villagers to keep some photographs for their own use, which the research team hoped would be another incentive or "gift" for the villagers' participation in the study.

Step 5: Assessing the photographs' contents.

The research team set the stage for the morning activities with the village photographers. Of the eight villagers who were asked to participate, six (all males) returned with their photographs and participated in the interviews. One villager returned with the photographs and the camera but did not participate in the interview, and one villager simply returned the camera but did not submit photographs or participate in the interviews. The team then viewed a total of 60 photographs and interviewed six villagers individually. Each villager was asked to show his photographs and explain what those photographs represented to him about the future

of Snake Village. The villagers were assured that their photographs and responses would not be shared with others. The interview room was staffed with the ISU interviewer, the interviewee, a graduate student from Zhejiang University who served as interpreter, a professor from Zhejiang University with expertise in rural development issues in China who could assist in interpreting and could advise the ISU interviewer about appropriate categorization of photographs, and the ISU professor-in-charge of the study.

During the course of the individual interviews, the participants waiting for their turn wandered in and out of the interview room (see Figure 2). Again, in order for the villagers to save face and to maintain their cooperation, nothing was said to remind them of the "rules" about privacy for this particularly activity. They were clearly curious about the process. Once they understood the procedure, they seemed content to leave the room and wait for their turn to be interviewed. They did not seem particularly interested in the photographs or the responses of their fellow villagers. It seemed that they were simply trying to reduce their level of uncertainty about what was expected of them. (It was also observed during other fields trips and activities that privacy is not a huge concern in China. Indeed, during a tour of a traditional Chinese medicine clinic in Hangzhou earlier in the visit, the ISU team was completely surprised that patient interviews and exams were observed by other patients waiting their turn to see the doctor. It was common practice for five to eight waiting patients to examine each others' medical records and listen intently as patient and doctor discuss medical symptoms, diagnosis, and recommendations. When the team's Chinese hosts were asked about this lack of privacy, they simply explained that in China everything is everybody's business. Frankly, the researcher was pleased that she was able to maintain some amount of privacy in the interviews with the villagers.)

Figure 2. Village participants were interviewed individually based on the photographs they have taken.

Prior to the interviews, the research team members developed categories they anticipated the villager's photographs would fall into in terms of anticipated "care abouts." However, it was agreed that other categories could and should be added during the interview process as expressed by the participants. The initial "care about" categories set up for the interview included:

future of children
education
extended family (parents)
transportation
markets
money (increased income)
housing/living conditions
environment/water quality
health
drug/alcohol abuse
religion/Budhism

During the course of the interviews, two other categories were added:

Diversification/planning
Friendly community relations

The next chapter includes a chart that provides an overview of the villagers' categorized responses.

Step 7: Arriving at a village consensus.

With the assistance of the ZU graduate student and professor, the categories used to sort the photographs were translated into Mandarin Chinese. The ten categories were written in English and Mandarin Chinese on eleven separate pieces of paper that were then given to the villagers as a group. The ZU professor explained that all the photographs were categorized into ten groups which described in general the villagers' "care abouts." The villagers were not told how many photographs were placed into each category. Only the categories were made known to them. The villagers were then asked as a group to put the categories in priority order. The ISU team assumed prior to the exercise that this process would be the most time-consuming and that they would need to play an active role in facilitating the process. It is surprising that a consensus was reached after only 8-10 minutes of discussion among the villagers with no facilitation from the ISU team.

When the categories were prioritized, the villagers seemed pleased that the process had been fair and were enthused about sharing the results with the ISU team. The villagers prioritized the categories as follows:

1) Planning/Diversification
2) Transportation
3) Market Development
4) Increased Income
5) Community Relationships/Friendships
6) Health
7) Future of Children
8) Improved Housing
9) Environmental Issues

The following pages provide a description of each category and the photographs assigned to those categories.

Diversification: While snake production has served the village well, some villagers expressed concern that snake production alone would not meet the future needs of the village. In order to remain prosperous, the village must broaden its focus beyond snake production and consider additional avenues for increased economic growth.

The need for the village to diversify beyond value-added snake enterprise is represented by this rice field.

This photograph of a fisherman also represented the need to diversify.

Transportation: As one of China's biggest and most reputable value-added snake product suppliers, the villagers were concerned about transporting goods to their buyers.

Transportation systems as a care-about is represented by this four-lane highway approximately five miles from Snake Village.

Another photo representing transportation as a care-about—this one on the waterways.

Market Development: The villagers understand that expanded markets will result in higher income. Market development was referred to in terms of clientele at the local, regional, and international levels. It was not clear, however, who should be responsible for market development—only that it is important for the future of Snake Village.

Two people in the background have arrived at the village to purchase snakes. The photo represents the concern for improved markets for Snake Village products.

Increased income: This category, while fourth on the priority list, elicited the most photographs. It refers to the desire of the villagers to have more income available to them in order to increase their purchasing power. Photographs included representations of current sources of income, potential means of increasing income, and material goods that could be purchased with increased income.

This photo of crops was explained as a desire for increased income. It seems to also represent the need for village diversification.

Silkworm production also represents increased income though it, too, could easily fit the diversification category.

Snakes represent income as one villager's care-about.

This photo of a shrimp harvester also represents increased income as a care-about. Again, the need for diversification may be a more suitable categorization for this photo.

Community Relationships/Friendships: In China's group-oriented society, the principle of *guanxi* commits friends and associates to do what they can for each other. For rural Chinese, it means putting the needs of the group above oneself. The photographs submitted under this category represent the commitment to and the importance of maintaining friendships in the village.

Community/friendship was ranked fifth in the priority list.

A central community center represents community/friendship as a care-about.

Health: The traditional system of guaranteed health care at no or low cost is being replaced by an insurance-based system that requires patients to pay for a portion of their treatment. In addition to the physical benefits of good health, there is also an economic concern regarding good health.

This 99-year old villager represents long life and good health. (It was added that her health is due to the care she received from the government.)

Future of Children: Since opportunities for employment and economic security are limited in rural areas, parents desire for their children to become educated and obtain jobs in cities.

Children at play represent the future of children as an area of concern.

Pre-school children in a day-care center express the concern for children's future.

Improved Housing: Rural Zhejiang Province is dotted with newly-constructed two- and three-story single family dwellings, most of which have been built either by successful crop farmers on the outskirts of major cities or by cooperative and state farms. In contrast, Snake Village housing consists of older three- or four-room, one-story stone structures.

This new housing complex is not located in Snake Village, but it represents one villager's care-about for improved housing for his family and community.

Environment: Water is usually not potable and open sewers are common. In addition, the use of pesticides to increase crop production throughout China over the past few decades has raised concerns about water and air pollution. In some of their photographs, Snake Villagers expressed concern about the environment as it relates to their water supply.

Environmental concerns are represented with this photo of a well house.

This photo of a water/waste system around Snake Village is a good representation of environmental concerns.

The difference between the number of photographs placed in the above categories and the priority assigned to each category is interesting. While 23 of the 55 photographs fit into the "increased income" category as determined by the interviewer, the villagers placed that category as fourth in importance following diversification, transportation, and improved markets. The ISU team did not have an opportunity to explore these differences with the villagers. A number of possibilities come to mind, however, when trying to understand the number of photographs that represent the villagers' "care abouts" versus the consensus they reached regarding the prioritized list of "care abouts." These will be discussed in the next chapter.

Step 8: What the university thinks.

Graduate student responses. With the assistance of Professor Huang Zuhui, Dean of Economics and a key partner in the ISU/ZU Partnership Project, eight graduate students agreed to participate in the activity. All of them were enrolled in programs related to rural development issues (agricultural economics, international finance, rural development) and were fairly fluent in English. Because of the students' fluency in the English language, the ISU team provided an overview of the study in English (without the aid of an interpreter) and instructed the students about the nature of their participation. Each student was given a 5x7 index card and was asked to make individual lists of ten things they thought the villagers indicated were the village's "care abouts."

While the graduate students seemed eager to participate in the study and enjoyed the opportunity to interact with two university staff members from the United States, there seemed to be some hesitation to begin making their lists. It became clear quite soon that many of the graduate students had never been in a rural area and that they had never heard of Snake Village. (Throughout the course of this study, the ISU team was continually reminded of the lack of opportunity for urban dwellers to visit rural areas and vice versa.) As such, the ISU

team had to provide an overview of Snake Village, including its population, its main sources of income, its income "history" in terms of moving from one of the poorest villages in the province to one of the top snake producing villages in China. The graduate students were also assured that their lists would not be evaluated as "right" or "wrong." Rather the lists would serve as a tool to study congruence in perception of village needs between the villagers and Zhejiang University faculty and students. With background information on Snake Village and assurance that their responses will not be "graded," the graduate students carefully completed the assignment, writing their lists in English.

Faculty responses. The final group interviewed, the ZU professors, proved to be the most challenging. The professors were again chosen by Professor Huang Zuhui and included experts in agricultural production (horticulture, agronomy) and agricultural economics with scientific orientation towards the "hard sciences." Six professors participated (although the request had been made for 8-10 professors to participate). An explanation of the case study, along with instructions concerning what to do, was given through an interpreter. While the professors tried to remain polite, they questioned the scientific validity of such a study given that the previous groups studied consisted of less than 30 participants. The ISU professor-in-charge again provided an explanation of extension planning based on client needs clarification. The interviewer explained that it was not the purpose of this research to develop quantitative statistical data. She also acknowledged that photo elicitation as a research method is rarely used in the United States and that the study is intended to test in an exploratory way the process used to gain information as well as to ascertain the responses of the villagers, graduate students, and professors alike. While these discussions were done through an interpreter, it was clear that the professors were skeptical of the study. After discussing the study among themselves (that the interpreter did not translate most likely out of politeness), the professors reluctantly completed the task, writing their responses in Chinese on the 5x7 index cards. Following the exercise, the interpreter apologetically confided to the ISU team that the ZU professors thought the study to be ridiculous.

Since the professors' responses were written in Chinese, the interviewer asked the same ZU graduate student who interpreted for the villagers to translate the professors' responses into English.

Step 9: Comparing the responses of all groups for congruency and accuracy.

This part of the study is discussed in detail in the Results and Discussion chapter.

A report of the findings will eventually be shared with the Zhejiang University extension staff. The report will include a set of recommendations for ZU's consideration as they fashion not only an extension service that meets the needs of the villagers, but also a new academic major on regional rural development within ZU's Department of Economics. These implications and recommendations are outlined in Chapter 6.

Chapter 5: Results and Discussion

What the Villagers Care About

Table 1 provides an overview of the villagers' responses by category. By far, most of the photographs, 23 in total, represented a desire for increased income. Other care-abouts included children's future, housing/living conditions, improved markets to sell goods, systems planning/diversification, community relationships/friendships, transportation systems, health, care of elderly family/parents, and government Party loyalty/commitment.

The category of "increased income" that elicited the most photographs reflects the villagers' desire for increased purchasing power. Yet, upon completion of the interviews and further review of the photos, the researchers found that the "increased income" photographs could also, for example, fall under the "diversification/planning" or "housing" categories. The research team, however, coded the responses based on what the villagers explicitly stated as a perceived need. To the villagers, increased income was necessary to improve the living conditions of their families. During the interviews, some villagers described what was obvious in the photographs rather than what the photographs meant in terms of their "care abouts." When pressed by the interviewer to explain what the photos represented, the villagers almost always replied with a smile that the picture represented "more money" or "higher income."

Although 23 of the 55 photographs easily fell under the category of "increased income," this category was placed fourth in importance, following diversification, transportation, and improved markets. Table 1 shows how the villagers prioritized the categories and the number of photographs whose content fit into each specific category.

The ISU team did not have an opportunity to explore why "planning and diversification" was chosen as the top priority even though more than 42% of the photographs submitted indicated "increased income" as a "care about." A number of possible explanations, however, come to mind.

It is possible that the translation of the discussions between the villagers and the interviewer had an enormous impact on the categorization of the photographs. The villagers' responses passed through both the filter of the translator and the filter of the interviewer. The translator was a graduate student in economics and management from Zhejiang University who had never before visited a rural area. Her English skills were adequate and she seemed to possess a good knowledge of her area of study. It is possible that her translation skills were limited so that the villagers' responses were translated into English simply as "increased income." The researchers did not pursue in depth how the villagers would seek to increase their income. Their translated responses were taken at face value.

Another possibility is that, while the villagers' end goal is to increase income, it was difficult for them to articulate photographically how they should go about doing so. One must take into account the lack of opportunities for rural villagers to learn and practice decision-making and entrepreneurial skills under decades of a Communist government controlled economy. It has not in recent history been the role of the villagers to determine how to increase their income; they have been accustomed to receiving inputs and orders from government leaders. Two farmers presented four photographs and explanations that clearly fit into the "village planning/diversification" category. Once that category was offered to the other villagers, it may have seemed most logical to assign it top priority.

Table 1 also shows that three of the four photographs representing planning/diversification were presented by a man who oversees the village government. Perhaps his influence as an official outweighed the prioritization scheme of others. It is likely that the villagers looked to him for leadership in determining how to prioritize the categories.

What Zhejiang University Thinks the Villagers Care About

While the responses from ZU graduate students and professors were collected separately, the purpose of this project is to compare ZU responses with those of the villagers. In order to do so, their responses have been placed under the same categories as those used to sort out the villagers' photographs. Tables 2 and 3 show the two groups' responses. Reponses

from graduate students and professors that did not clearly fit into a category are noted on the bottom of the table. Before comparing ZU responses as a whole to those of the villagers', it is interesting to compare the responses of the graduate students with the villagers and the responses of professors and villagers separately.

What the graduate students think the villagers care about. Table 2 places the students' responses into the same categories as those used to categorize the villagers' photographs. As noted above, graduate student responses that do not clearly fit into a category are noted on the bottom of the table. Individual graduate student responses are listed in detail in Appendix 1.

Chart 1 provides a snapshot comparison of the responses of the villagers, graduate students, and professors in terms of the percentage of responses that fit into each "care about" category. This chart also expands the categories to include those added after receiving responses from ZU graduate students and professors.

The data in Charts 1 and 2 are summarized in terms of percent of total responses from each of the three groups rather than the actual number of responses because the number of responses from each group differed considerably (villagers, n=54; graduate students, n=77; professors, n=59). Translating the actual number of responses from each group to a percent of total responses within each group allows for a more useful comparison and analyses of congruency between the villagers and ZU.

Chart 1 shows that 9.3% of village photographs and 9.1% of graduate student responses fell into the "children" category. The only other two categories that are relatively close to each other are "housing" with 7.4% of village photographs and 6.5% of graduate student responses, and health with 7.4% of village photographs and 6.5% of graduate student responses falling into those categories.

Congruence can be found between graduate students' perception of village needs with those of the villagers. In general, graduate students thought the villagers would be most concerned with markets (third on the villagers' priority list) and increased income (fourth on the villagers' priority list). Incongruence happened when they also thought villagers would be

concerned about production costs, government policy, technology, and continued education or training, none of which were mentioned by the villagers. Only 4% of the graduate student responses fell under the villagers' first priority category of "planning/diversification." The second villager priority, "transportation," received little attention from the graduate students, representing only 2.6% of the responses.

What the Zhejiang University Professors think the villagers care about. Table 3 places professors' responses into the same categories as those used to categorize the villagers' photographs. The professors' responses that did not clearly fit into a category are noted on the bottom of the table. (Individual professors' responses are listed in detail in Appendix 2.) Chart 1 indicates that the four categories where the villagers' and professors' responses were congruent include markets (7.4% and 10.2%), community relationships/friendships (7.5% and 5.1%), future of children (9.3% and 6.8%), and housing (7.5% and 5.1%). The villagers' top priority of "planning/diversification" was expressed in only 3.4% of the total professors' responses. The villagers' second priority, "transportation," was included in only 1.7% of the professors' responses, and the third priority of market development was included in 10.2% of the professors' responses. The top categories the professors felt the villagers were concerned about that were not included in the villagers' photographs were continuing education (16.9%), government policies (13.6%), production costs and technology (both at 8.5%), and outside investments (6.8%).

Combined ZU Responses compared to Villagers' responses. Chart 2 shows the combined responses of ZU professors and graduate students compared to those of the villagers. It indicates that while most the villagers' photographs (42.6%) expressed that income was the most frequently cited "care about," the ZU participants assumed that markets, government policies, and education would be the biggest concerns of the villagers. Markets was the response given 13.2% of the time by the ZU participants, with government policy at 11.8%, and education at 10.3%. The villagers' most cited category, income (42.6%) was mentioned in only 8.8% of the ZU responses.

The ZU participants' perception of village problems and villagers' notion of their needs were most closely aligned in the categories of health (5.6%, villagers; 4.4%, ZU), the future of children (9.3%, villagers; 8.1%, ZU); and the environment (3.7% for both groups). A significant number of responses from ZU participants were not even indicated as a "care about" by the villagers. For example ZU participants listed 16 or 11.8% of the responses for government policies, 11 or 8% for production costs, 11 or 8% for technology; and 14 or 10.3% for education.

The information summarized in this chapter provides a starting point from which policy makers can begin to evaluate the congruency of perceptions between the villagers and university extension personnel. The next chapter will discuss the implications of these findings and will forward some recommendations for Zhejiang University's consideration concerning its role in China's rural development endeavors.

Chart 1. Comparison of responses of rural villagers, graduate students, and professors as percent of total responses from each group.

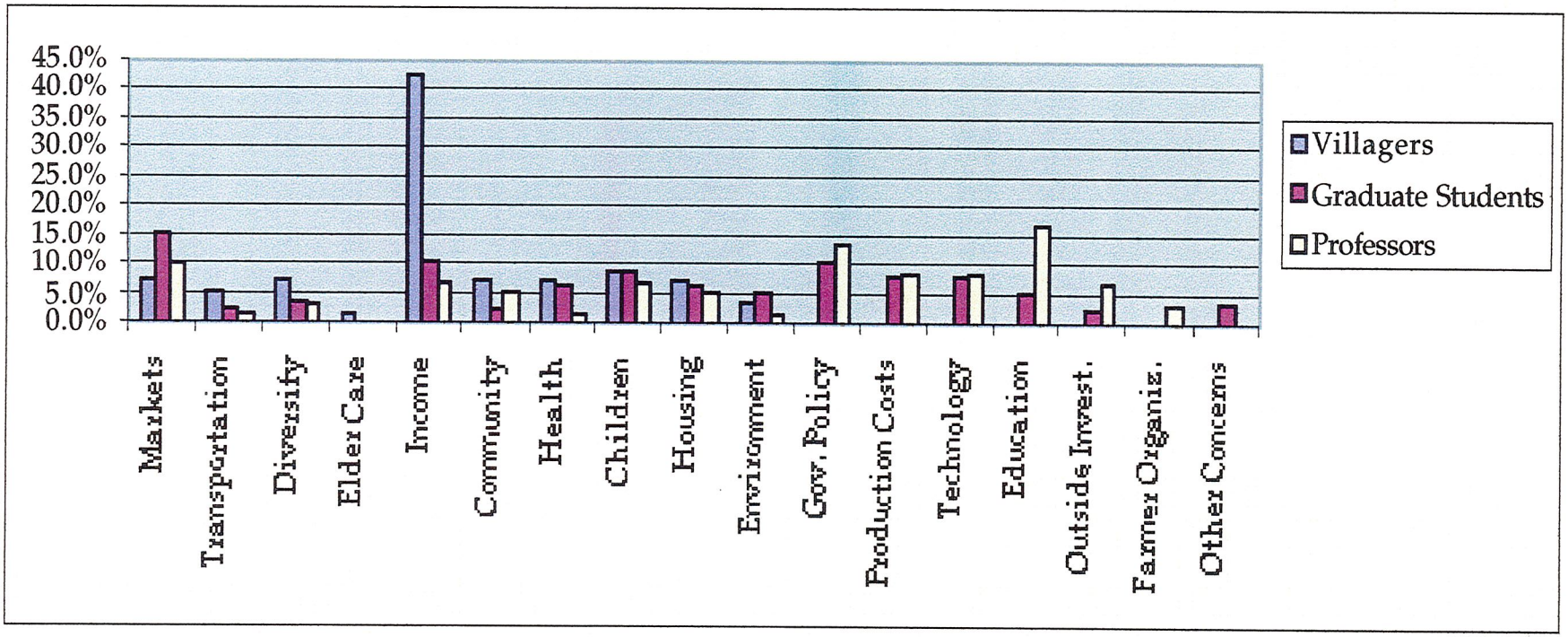
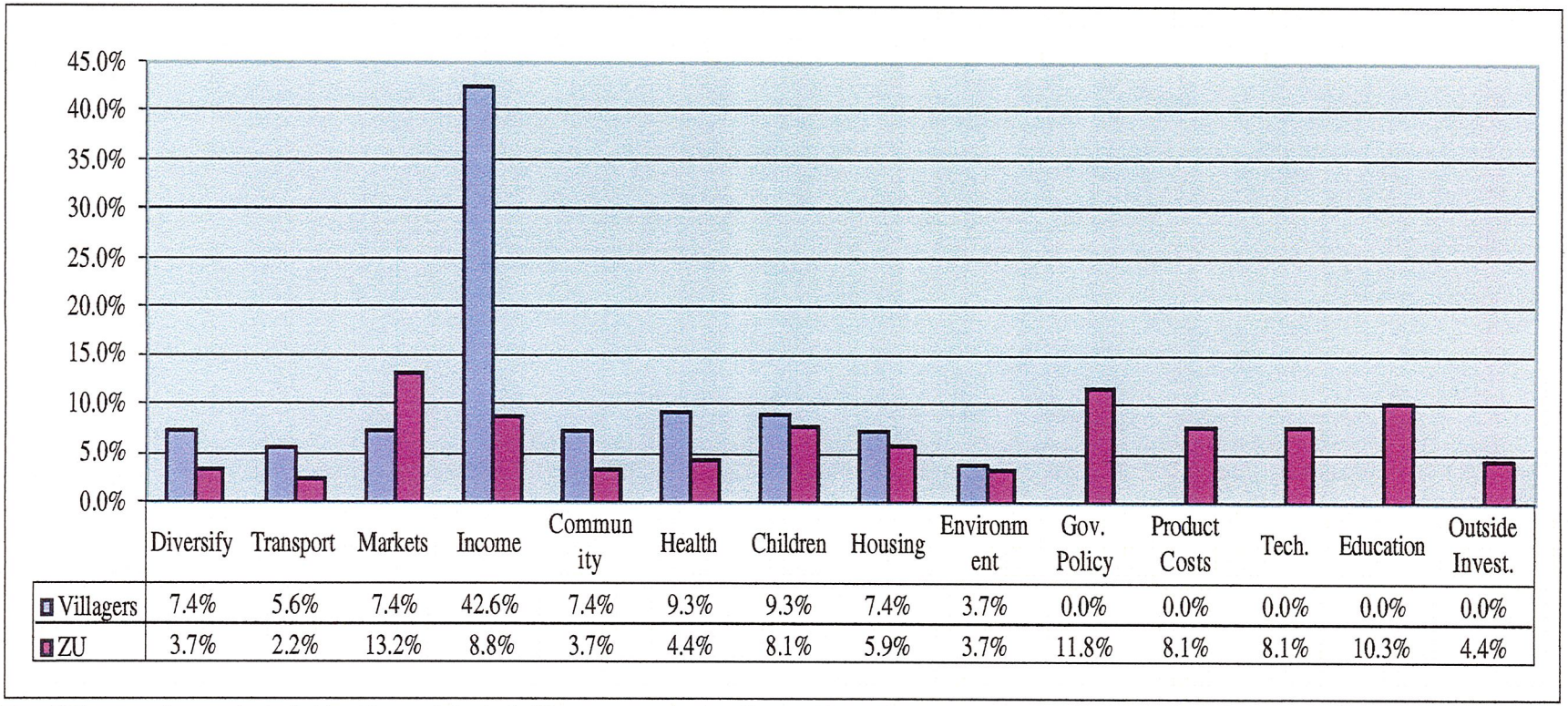


Chart 2: A percentage comparison of the villager and ZU responses based on percent of total responses for each group.



	Diversify	Transport	Markets	Income	Community	Health	Children	Housing	Environment	Gov. Policy	Product Costs	Tech.	Education	Outside Invest.
Villagers	7.4%	5.6%	7.4%	42.6%	7.4%	9.3%	9.3%	7.4%	3.7%	0.0%	0.0%	0.0%	0.0%	0.0%
ZU	3.7%	2.2%	13.2%	8.8%	3.7%	4.4%	8.1%	5.9%	3.7%	11.8%	8.1%	8.1%	10.3%	4.4%

*Two ZU categories not included in this graph include "farmer organizations" at 1.5% and "other concerns" at 2.2%.

Table 1. Each villager's photographs and where they fall in the identified "care about" categories.

	Develop Markets	Improve Transport	Planning/ Diversify	Increase Income	Community Friends	Health	Children	Housing	Environ-ment
Villager 1 Snake Producer			x	xx	x	x	x		x
Villager 2 Snake Producer		x		xxx	xx		xx		
Villager 3 Snake Producer				xx	x	xxx			
Villager 4 Snake Producer	xx			xxxxxxx			x	x	
Villager 5 Village Govern-ment	xx	x	xxx	xx		x		x	
Villager 6		x		xxxxxxx			x	xx	x
Total/ Category	4	3	4	23	4	5	5	4	2
% of Total (Responses n=54)	7.4%	5.6%	7.4%	42.6%	7.4%	9.3%	9.3%	7.4%	3.7%

Note: Some photographs represented more than one category while other photographs were not categorized because the interviewee could not or did not explain what the photograph represented.

The categories included by the interviewer prior to the interviews but not indicated as a "care about" by the villagers have been eliminated. Those categories include: education, drug/alcohol abuse, and religion/Budhism.

Table 2. Categorized graduate student responses to the question, "What do you think the Snake Villagers "care about?"

	Markets	Improve Transport	Planning/ Diversify	Increase Income	Com-munity/ Friends	Health	Children	Housing	Environ-ment
Student 1	x			xx		x	xx	x	x
Student 2	xx		x						
Student 3	x	x			x	x	xx	x	x
Student 4		x		x	x	xx	x	x	
Student 5	xxx		x	x					
Student 6	xxx								x
Student 7			x	xx		x	x	x	x
Student 8	xx			xx			x	x	
Total	12	2	3	8	2	5	7	5	4
% of Total (Responses n=77)	15.6%	2.6%	4.0%	10.4%	2.6%	6.5%	9.1%	6.5%	5.2%

Categories not listed above (number and percent of responses)
*Government control, policies, land use, taxes: (8 or 10.4%)
*Production costs: 6 or 7.8%)
^Technology: (6 or 7.8%)
^Competition: (1 or 1.3%)
^Affects of tourism on village: (1 or 1.3%)
^Education (traditional, training, access to information, etc.): (4 or 5.2%)
^Worker satisfaction: (1 or 1.3%)
^Outside Investment/Funding: (2 or 2.6%)

Table 3. Categorized Zhejiang University professor responses to the question, "What do you think the Snake Villagers "care about?"

	Markets	Improve Transport	Planning/ Diversify	Increase Income	Com-munity/ Friends	Health	Children	Housing	Environ-ment
Professor 1		x	xx				x	xx	x
Professor 2	xxx								
Professor 3	x			xx		x	x		
Professor 4	x			x	xx		x		
Professor 5				x			x	x	
Professor 6	x				x				
Total	6	1	2	4	3	1	4	3	1
% of Total (Responses n=59)	10.2%	1.7%	3.4%	6.8%	5.1%	1.7%	6.8%	5.1%	1.7%

Categories not listed above (number and percent of responses)
*Government control, policies, land use, taxes: (8 or 13.6%)
*Production costs: (5 or 8.5%)
^Technology: (5 or 8.5%)
^Education (traditional, training, access to information, etc.): (10 or 16.9%
^Outside Investment/Funding: (4 or 6.8%
^Power of farmers' organizations: (2 or 3.4%)

Chapter 6: Implications and Recommendations

At face value, the responses summarized in the previous chapter indicate a lack of congruency between the villagers and the university people concerning perceived "care abouts." The most profound differences were evident when considering the percent of photographs submitted by villagers for each category in comparison with the percent of responses indicated by ZU graduate students and professors for those categories. However, the villagers and ZU respondents were not necessarily that far apart in their thinking regarding the future of Snake Village.

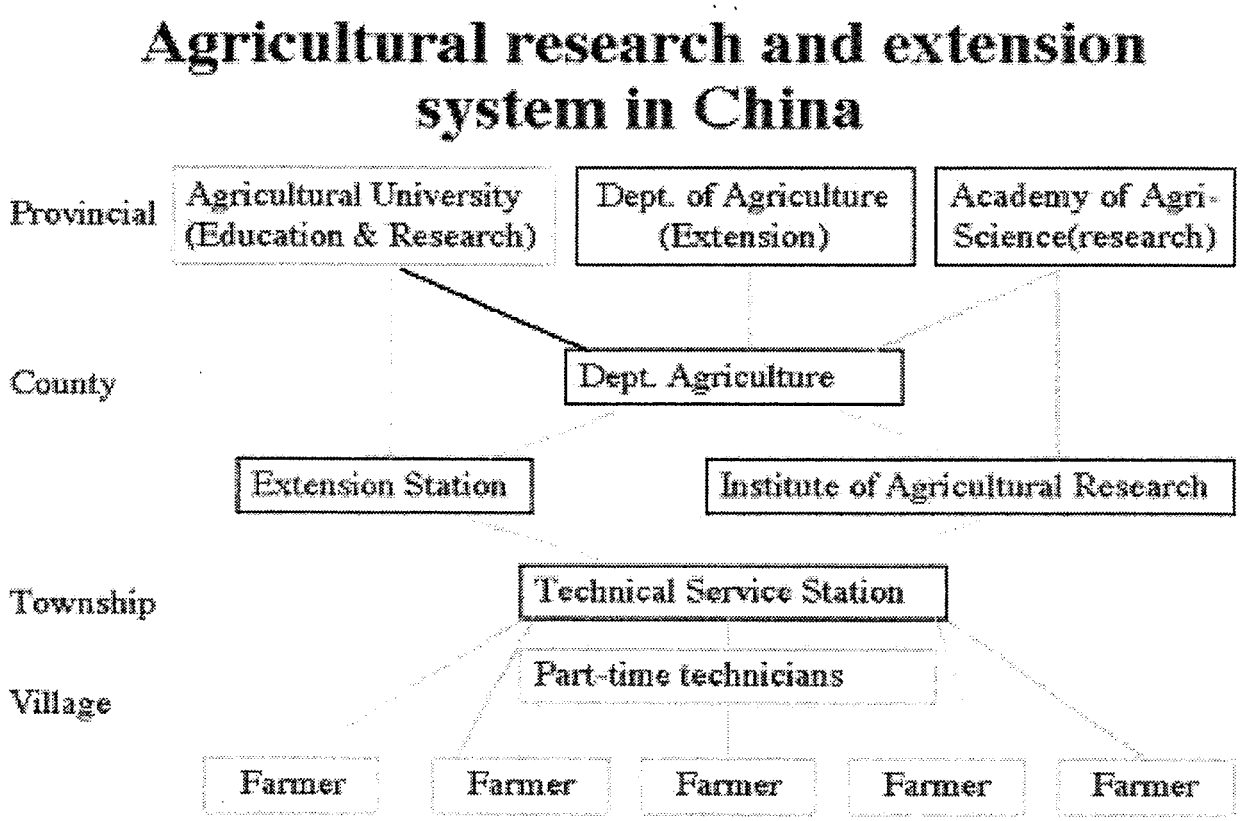
While villagers listed planning/diversification, transportation, market development, and increased income as the four top categories of "care abouts," the ZU respondents cited market development, government policy, education, and increased income as the categories they thought the villagers would be most concerned about. While ZU respondents listed categories that were not given by the villagers (i.e., government policy, production costs, technology, education outside investments), these categories are important for strong and continued economic growth, including village diversification, market development, and increased income that the villagers indicated should be top priorities. While additional research is necessary to elaborate on the villager and ZU responses, the university respondents demonstrated academic and critical thinking skills in the priorities they have drawn for a village to become and remain economically viable.

Zhejiang University is perfectly suited to assist Snake Village and other rural areas in developing and implementing strategies to move the country toward a free-market economic system being promoted and encouraged by the Chinese government. Indeed, it is the view of the researchers that ZU is the most auspicious institution to take the development charge in Zhejiang Province. Although the following recommendations are offered from a Western perspective, it is hoped that Zhejiang University will review the recommendations with an eye

towards refining them to fit the political, economic and social structure in which the university operates.

The university must first determine what its philosophy and mission will be. In doing so, a number of possibilities exist in determining what role it can play in assisting rural villages during the transition from a command economy to a free market economy.

Given the current bureaucratic structure of extension efforts in China, it is unlikely that ZU can or should become a direct service provider to farmers.



As indicated in the above organization chart, Chinese agricultural universities do not have direct communication with rural farmers. Working through the Department of Agriculture and the township and village technical service stations, Zhejiang University can still play an important role in developing programs and in delivering services for the benefit of rural villages.

Of course, ZU must determine how to work within the existing governmental framework in order to implement programs whose end beneficiaries will be the rural population. It is likely, however, that the existing structure of the agricultural bureau overseeing extension will not be challenged in the near future. As such, ZU may need to focus its efforts on working with and through the agricultural bureau to provide services to villages.

Zhejiang University must also consider how its academic and research programs are preparing future leaders to meet the demands of a changing economic system. In other words, ZU must critically review its curriculum as it relates to rural development issues, including issues related to free market economics, strategic planning, decision making, and critical thinking. This review must not be limited to the actual courses offered to undergraduate and graduate students. It must also include a review of the knowledge and experience base of the very professors who teach and train China's future leaders. Where there is lack of knowledge and experience in the areas of free market economics, Zhejiang University must provide opportunities for its professors to take faculty improvement leaves or participate in short-term continuing education programs in free market system countries.

During the past two years, Zhejiang University has developed two important research and academic programs in response to the changing economic and political tides in China. First, the new Center for Agricultural and Rural Development, approved by the Ministry of Education in Summer 2000, is aimed at improving the quality of life in the rural areas by conducting research on the problems that China faces in the process of agricultural and rural modernization. Second, Zhejiang University is developing a new Rural Development major which, if structured with the country's economic transformation in mind, has the potential to train thousands of undergraduate students in the so-called "soft" skills related to leadership, decision making, strategic planning, and critical thinking. In preparation for this new major, ZU should consider a needs clarification process training program (as developed by B. Lynn Jones, Iowa State University) for its professors. The ZU professors would be required to practice the process as well as teach it as part of the graduate curriculum. In both cases, Zhejiang

University should find opportunities for its administrators, professors, and graduate students to explore and study the curriculum enforced in established universities in democratic countries to better understand the importance of acquiring both technological and sociological skills in a free-market system.

The responses of Zhejiang University graduate students and professors provide evidence that ZU possesses the expertise to assist rural villages, either directly or through the agricultural bureau, in developing a strategy to assist economic growth through rural enterprises. While the villagers may simply state that their major concerns are diversification, market development, and increased income, Zhejiang University experts can develop programs for and in consultation with villagers to explain the many facets related to diversification, market development, and increased income. ZU might also consider developing a series of continuing education programs for villagers that relate to government policies, production costs, technology costs-benefits, environmental issues, investments, credit, farmer organizations, and other factors that influence community development. Again, these programs can be managed through the Bureau if not provided directly to the villages. In any case, Zhejiang University should consider leading efforts to provide such information to China's rural population. These and other community development issues will be particularly important in response to China's future plans to relocate small villages to create smaller cities, thereby freeing up more land for production.

Zhejiang University must, first and foremost, consider how it can best serve China's rural development goals. It is evident in this study that communication between Zhejiang Univesity and their rural constituents is sorely lacking. Indeed, the ISU researchers found that many ZU professors and graduate students have never even been to the rural areas. Yet they are teaching and studying the history and future of rural development in China and will, in just a few years, be China's leaders and educators. In their coorientation theory, McLeod and Chaffee warn that two co-orienting bodies should be expected to hold different perceptions since they have different roles, purposes, prior experiences, and communication potentials.

Following this line of thought, one can also assume that the villagers' perceptions are not at times congruent with those of their university counterparts. Indeed, intrapersonal orientations that each person or group brings to a situation are very important to understanding the perceptions of a social situation held by an individual. These intrapersonal orientations will influence the dyadic results of the interpersonal communication process. As such, it is extremely important for Zhejiang University to first understand the importance of open communications and that of beginning a dialogue with rural villages.

Because ZU will not have a great deal of human or financial resources for experimental programs, careful attention to program planning and delivery based on the true "care abouts" of the rural villages will assist in the wise deployment of resources. As China prospers and encourages entrepreneurial activities, it must recognize the need to provide continuing education and training programs to the rural sector. Zhejiang University is well positioned to be a leader in this area if it chooses to do so.

Chapter 7: Conclusion

Reflecting on any research project brings both feelings of contentment and discouragement. This can certainly be said about this particular study. It is instructive, however, to share both the areas that the researchers feel have been successful, as well as the areas that clearly can be improved upon or that would benefit from further research.

Photo-Elicitation as a Research Method

The use of photo-elicitation as a research tool in this study proved effective. The researchers won the trust of the villagers by simply giving each of the eight villagers a camera with film and assuming that they would return in two days with the cameras and photographs in hand. The villagers were fascinated with the cameras and the instant film processing. The villagers' incentives for participating included enough film for the villager to keep ten photographs for his/her personal use, along with a cash payment of 40 yuan ($5.00 USD). The use of photographs and intensive interviews in an integrated way enabled the researchers to obtain information and encourage dialogue that probably would not have been possible through conversations focused on written or verbal interviews alone. It is likely that the researchers would not have been given access to the villagers without the use of photo-elicitation as a research method. The cooperation from the county and village leaders stemmed in large part from their curiosity about how cameras were to be used by the villagers to obtain information. In effect, the cameras served as tools that "unified" the researchers, government leaders, and villagers.

The focus of discussion between the villager and researcher became the photograph, rather than a question posed by the interviewer. The photographs did not make sense to the interviewer without an explanation from the Chinese villagers. More importantly, though, the villagers had an opportunity to verbalize their thinking about the future economic and social welfare of their village, a task historically left to party leaders at the village, county, province,

and national levels. The villagers' experience with the interviewer is likely their first in an organized exercise that encouraged thinking and discussion about strategic planning for the village. During the researchers' travels in China, village, county, and provincial government employees explained that their instructions come from the next higher level of government. These directions are then passed down the line through the channels and eventually to the villagers. While this research exercise will not change the political and decision-making infrastructure of the county or village, the villagers had, perhaps for the first time, an opportunity to verbalize their concerns about the future of Snake Village to an outsider--a foreigner--and to seriously consider strategies for increasing income, broadening markets, and diversifying village enterprises. It is the very purpose of this study to encourage Zhejiang University administrators, professors, and extension agents to consider the importance of engaging rural villagers in discussions about rural development. Hopefully, this study also sets the stage for the villagers to engage in such discussions with Zhejiang University representatives or other policy makers should that opportunity arise.

The researchers did not allow enough time to review photographs and conduct interviews with the villagers. In fact, there was some sense of urgency by the researchers' hosts (Zhejiang University) to complete the project and leave the village as soon as possible. The researchers had to rely on the goodwill of the University for transportation to and from the village and for a professor and interpreter (graduate student) to conduct the study. Photo-elicitation allowed the researcher to gain a sense of the villagers' day-to-day life and concerns as the villager explains what the objects in the photograph mean, where they came from or developed from, and what elements may be missing. It offers villagers the opportunity to better understand his or her social world that perhaps did not exist prior to the interview. In this study, the researchers simply did not have sufficient time to obtain more than a cursory explanation of the photographs taken.

Interviews with Zhejiang University Graduate Students

The sessions with graduate students went fairly well. The students seemed prepared to participate in the study and asked numerous questions to gain a better understanding of their role in the study. It was surprising to learn that many of them had no experience with rural villages. In fact, many had never been outside the city, even though their academic specializations focused on rural development issues. The researchers were glad to have acquired detailed information about Snake Village that could be shared with them.

The graduate students listed ten responses to the query "What do you think the villagers care about for the future of their village?" on index cards. All responses were written in English. Prior to dismissing the graduate students, the interviewer read the responses (silently) and asked each other questions privately to clarify responses. Although the interviewers tried very hard to provide simple and succinct instructions, some were still confused about the nature of the study and the task set before them. This segment of the study could have been strengthened by spending more time in discussion with individual graduate students. It would have been instructive to know more about each student's background, including their exposure to rural villages and their goals for employment following graduation.

This part of the exercise was important in that it encouraged the students to think about the concerns of the villagers. Their studies of rural development at Zhejiang University likely focus on what the government thinks is good for rural development. This, in itself is not wrong. Indeed, universities throughout the United States and other free-market economy countries offer similar curricula. Hopefully this study provided a forum for the graduate students to at least think about the needs and concerns of the villagers--the very population that the students are being trained to serve.

Interviews with Zhejiang University Professors

The interview portion with the professors was, by far, the most disappointing of the three components. The professors who participated in the study were neither prepared nor

enthused with the study. It is likely that their participation was coerced. This was particularly disappointing considering that the interviewers had spent a great deal of time and energy explaining to the ZU administration the importance of this part the study. In a word, the professors were nonchalant.

The hesitation to participate seemed to stem, in part, from the ZU professors' concern that the data gathered will not be statistically viable. Although the senior interviewer explained that the process, the purpose, and the value of the study did not depend on bell curves and regression analysis charts, the ZU professors were clearly skeptical. Their behavior indicated that they considered the whole exercise a joke and a waste of their time. Discussions were conducted through an interpreter since most of the professors either did not know English or were not willing to communicate in English.

While it was easy to be discouraged by their response, it was also quite understandable. Qualitative versus quantitative methodologies have been pitted against each other in academic circles worldwide. Qualitative research, which focuses on sociological issues, is probably not even an option for any well-respected Chinese university professor. One of the tragedies of the Cultural Revolution was the government-directed abandonment of academic fields associated with liberal arts and sciences (sociology, anthropology, literature, etc.). It is no wonder that the ZU professors were less than enthusiastic about participating in a qualitative research study being conducted by foreigners who were trying to evaluate and make recommendations about ZU's capacity to assist villagers regarding rural development.

This experience with the ZU professors gives even more credence to the recommendations in the prior chapter regarding opportunities for ZU administrators, professors, and graduate students to explore and study curriculum at established universities in democratic countries in order to better understand the importance in a free-market system of acquiring both technological and sociological skills.

In summary, the research study was important in at least three ways. First, it set the stage and provided an opportunity for rural villagers to think about the future of their village.

Second, it encouraged ZU graduate students and professors to give some thought to what the villagers care about. Third, the researchers gained a better understanding of co-orientation between the rural villagers and Zhejiang University, leading to a set of alternative courses of action to consider as China moves toward an important and historical transition to a market economy.

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Appendix 1: Individual student responses to the question: What do you think the Snake Villagers "care about" in terms of the future of their village? (Responses were for clarification.)

Student 1:
a) family income
b) children's future
c) children's education
d) social status
e) government policy
f) economic change
g) increased cost of living
h) production cost increases
i) pollution
j) care for elderly (present and future)

Student 2:
a) the cost of snake production
b) taxes
c) government policy: will government forbid the production of certain commodities or crops
d) where they can sell more products/explore for production techniques
e) new methods of feeding snake
f) how to produce new snake goods
g) will government or some investor build a factory in Snake Village
h) are there other places that produce snake products out of Snake Village
i) will tourism affect Snake Villae
j) how will entering WTO influence the sale and production of snake goods

Student 3:
a) the market condition of the snakes or its byproducts
b) the improvement of the technology of snake production to make more money conveniently and safely
c) children's education
d) improved housing (purchase or build)
e) children's marriage
f) family's health
g) road improvement both outside and inside the village
h) social and recreational activities
i) how can television serve as an educational tool in the village
j) pollution of the river and lake serving the village

Student 4:
a) increased wealth
b) living conditions
c) access to information
d) traffic conditions
e) health care
f) children's education
g) skilled labor training
h) spirituality (books, film, religion)
i) social welfare benefits from the government
j) insurance

Student 5:
a) meeting client demands for snake products (flavor, color, package).
b) village income from snake product sales
c) worker productivity and cost of production
d) market share: are they competitive? should they consider exporting their products
e) worker satisfaction: are the workers very satisfied with their present situation? If there is job-hopping, why?
f) product development to increase income
g) is their product well-known
h) the difficulty of breeding snakes, including the death and illness rate of snakes, which affects cost of production
i) the scale of their factory, especially their production machinery
j) production environment - is the existing system within Snake Village working well, and would here be any benefit to building another chain factory?

Student 6:
a) future market price
b) new technology
c) government taxes on snake products
d) government services
e) environment
f) price of material (production costs)
g) consumers' consumption habits
h) quality of snake products
i) marketing information
j) government policies affecting Snake Village

Student 7:
a) future income
b) children's education (majority of parents want their children to reside in cities)
c) China's policy about agriculture, especially land use and land ownership policies
d) tax obligation of Snake Village
e) increased cost of living
f) desire for a high income job
g) health
h) what villagers should produce on their land to obtain a good income
i) new and improved technology related to their business
j) environmental concerns such as weather and water supply

Student 8:
a) increased income through their own business or through other jobs
b) desire for children to obtain higher education in order to obtain jobs in the city
c) build or renovate a bigger house of his/her own
d) market information to determine what crops will be profitable
e) to know the future of market as much as possible
f) to obtain financial funding from government or investors for their business
g) to make their business bigger and bigger

Appendix 2: Individual professor responses to the question: What do you think the Snake Villagers "care about" in terms of the future of their village? (Responses translated to English by ZU graduate student.)

Professor 1:
a) to chose what to plant or breed (based on profitability)
b) new, superior seeds which can improve production
c) develop some other agriculture related industries
d) improve quality of their life, such as housing and transportation
e) education for their children
f) environment and cleanliness of their village
g) improve transportation systems
h) increased training
i) renew and improve their knowledge
j) stable and comfortable living conditions

Professor 2:
a) market prospects (which business earns the most money)
b) superior seeds
c) improved science and technology to breed livestock and manage a large-scale production enterprise
d) information about how to protect the livestock from disease
e) desire for foreign markets to sell products
f) processing and packaging techniques
g) investment from and cooperation with other enterprises
h) workers who are trained specialists in science and technology or in marketing
i) stable markets to sell their products
j) trained specialists in the area of snake breeding

Professor 3:
a) make money and be rich
b) health care costs: the medical fee is very high; to a farmer's family it would be a heavy burden
c) desire for their children to have a bright future (because most farmers are not rich in China and they expect much of their children)
d) information about new techniques, but villagers it difficult to obtain such information
e) villagers are concerned about their poor knowledge and social standing
f) desire for government policies to remain stable
g) need assistance from friends who have some influence with the government
h) become rich quickly
i) increase circle of friends to do business with
j) desire that developing counties or provinces obtain support and help

Professor 4:
a) total family income
b) social status of the family
c) future of children, particularly the desire for children to find the "correct" job
d) improved science and technology that can result in higher income
e) can new technique or science be easily mastered and used
f) market supply and demand
g) protect their rights
h) changes of the government policy
i) security and peace of the society

Professor 5:
a) desire to engage in business that results in a high income
b) stable government policy
c) government should not to meddle in production issues
d) market information
e) capital support
f) superior and useful technique
g) power of the farmers' organization
h) price of the production material
i) housing
j) future of children

Professor 6:
a) the right to manage their own business will be protected over the long term
b) price of agricultural products
c) price of production material
d) new seeds with low-cost and high quality
e) an agency or broker to sell agricultural products
f) agricultural services organizations which charge reasonable prices
g) capital support
h) setting up farmer organizations in order to enhance cooperation
i) citizens' welfare and rights for farmers who move to towns or cities
j) construction within the village

Appendix 3: Recommendations for Further Research

Further study is needed to determine the congruency of thought and accuracy of perception between rural villagers and Zhejiang University. The Snake Village study was useful in determining the value of photo elicitation as a research tool. However, it barely scratched the surface of understanding rural village care abouts and Zhejiang University's perceptions on the topic. Consideration should be given to conducting more in-depth studies of rural village priorities. Possibilities include:

- returning to Snake Village to conduct the same type of study, using the same methodology, and increasing the number of respondents. Enough time should be allowed for the researchers to obtain photographs and conduct interviews with 45-50 villagers. Likewise, the number of participants interviewed at Zhejiang University should be increased in order to obtain quantitative comparative data as a tool for Zhejiang University to consider in fashioning new curriculum and evaluating its capacity to assist villagers regarding rural development.

- enlisting two or three interpreters during the interview process as a cross-check of how villager responses are translated into English and recorded into categories.

- recording villager responses in full and determining categories upon completion of all interviews, rather than immediately categorizing responses. In this case, the researchers would not begin the interviews with pre-determined categories in mind.

- obtaining demographic information of the village and university participants. It would be useful to understand in more detail the specific and individual roles of villagers; the background, academic emphasis, and career plans of the graduate students; and the rural experience base in rural areas and curriculum taught by the professors.

- duplicating the study in other rural villages engaged in specific enterprises within Zhejiang Province.